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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,478	11/03/2003	Hoon Jeong	0630-1859P	3178
2292	7590	06/24/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			QUARTERMAN, KEVIN J	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/698,478	Applicant(s) JEONG, HOON	
	Examiner Kevin Quarterman	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-25 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. The following title is suggested: --SHADOW MASK STRUCTURE FOR CATHODE RAY TUBE--.
3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because it exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

### ***Allowable Subject Matter***

5. Claims 1-25 are allowed.
6. The following is a statement of reasons for the indication of allowable subject matter: Regarding independent claim 1, the prior art of record neither shows or suggests a cathode ray tube comprising, in addition to other limitations of the claim, a shadow mask satisfying a condition of  $0.9 \leq ZmD/(ZmX + ZmY) \leq 1.1$ , in which an

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arbitrary point on a diagonal axis of the shadow mask is supposed to be  $D_r$ , points on a long axis and a short axis meeting with perpendiculars drawn to the long axis and the short axis from the point  $D_r$  are respectively supposed to be  $X_r$  and  $Y_r$ , and intervals between the respective points  $X_r$ ,  $Y_r$ , and  $D_r$  and the shadow mask in a tube axis direction are respectively supposed to be  $Z_{mX}$ ,  $Z_{mY}$ , and  $Z_{mD}$ . Due to their dependency upon independent claim 1, claims 2-13 are also allowable.

7. Regarding independent claim 14, the prior art of record neither shows or suggests a cathode ray tube comprising, in addition to other limitations of the claim, a dimension ratio of a panel being 4:3, a size of an effective surface of the panel on which a phosphor screen is deposited being 650mm~720mm, and a shadow mask satisfying a condition of  $0.9 \leq Z_{mD}/(Z_{mX} + Z_{mY}) \leq 1.1$ , in which an arbitrary point on a diagonal axis of the shadow mask is supposed to be  $D_r$ , points on a long axis and a short axis meeting with perpendiculars drawn to the long axis and the short axis from the point  $D_r$  are respectively supposed to be  $X_r$  and  $Y_r$ , and intervals between the respective points  $X_r$ ,  $Y_r$ , and  $D_r$  and the shadow mask in a tube axis direction are respectively supposed to be  $Z_{mX}$ ,  $Z_{mY}$ , and  $Z_{mD}$ . Due to their dependency upon independent claim 14, claims 15-23 are also allowable.

8. Regarding independent claim 24, the prior art of record neither shows or suggests a cathode ray tube comprising, in addition to other limitations of the claim, a shadow mask, wherein if a functional formula of a respective line connecting a maximum and a minimum value of a respective radii of curvature in directions of a long axis, a short axis and a diagonal axis of the shadow mask from a center towards a

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periphery is supposed to be  $y = Ax + B$ , the shadow mask satisfies a condition of  $-5.0 \leq A \leq -1.0$ , in which  $y$  denotes a radius of curvature,  $x$  denotes a distance from the center of the shadow mask to a position on the long axis, the short axis or the diagonal axis,  $A$  denotes a gradient of the lines, and  $B$  denotes a constant. Due to its dependency upon independent claim 24, claim 25 is also allowable.

9. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lee (US 6,841,927) discloses a color cathode ray tube with panel structure. Jeon (US Pub. 2003/0222562) discloses a shadow mask structure for cathode ray tube. Pyun (US 6,774,553) discloses a cathode ray tube with flat panel. Yoshida (US 6,690,106) discloses a color cathode ray tube with particular panel structure. Wakasono (US 6,528,935) discloses a cathode ray tube with particular panel structure.

11. This application is in condition for allowance except for the formal matters discussed earlier in this office action.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

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**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Quarterman  
Examiner  
Art Unit 2879

kq 

20 June 2005



**Joseph Williams**  
Primary Examiner  
Art Unit 2879